Amendment

In the Claims

1. (currently amended) A method for the biological production of polyhydroxyalkanoate containing 3-hydroxyhexanoate comprising providing genetically engineered bacteria expressing a ~~phbA~~ thiolase gene encoding an enzyme that converts butyryl-CoA and acetyl CoA to beta-ketohexanoyl-CoA, a ~~phbB~~ reductase gene that encodes an enzyme that converts beta-ketohexanoyl-CoA to beta-hydroxyhexanoyl-CoA, and a ~~phbC polymerase~~ gene that encodes ~~an enzyme~~ a polyhydroxyalkanoate (PHA) polymerase that polymerizes 3-hydroxybutyryl CoA and 3-hydroxyhexanoyl-CoA, wherein the enzymes are expressed in a sufficient amount to produce ~~polyhydroxybutyrate-co-polyhydroxyhexanoate~~ polyhydroxybutyrate-co-3-hydroxyhexanoate.

2-5. (canceled)

6. (currently amended) The method of claim 1 wherein the ~~phbC~~ polyhydroxyalkanoate (PHA) polymerase gene is incorporated into the bacterial chromosome.

7. (currently amended) The method of claim 1 for producing a copolymer of ~~polyhydroxyhexanoate~~ 3-hydroxyhexanoate comprising providing a ~~phbC~~ polyhydroxyalkanoate (PHA) polymerase gene from a bacteria selected from the group consisting of *Aeromonas caviae, Comamonas testosteroni, Thiocapsia pfenigii, Chromatium vinosum, Bacillus cereus, Nocardia carolina, Nocardia salmonicolor, Rhodococcus ruber, Rhodococcus rhodocrous*, and *Rhodospirilum rubrum.*

8-9. (canceled).

10. (previously presented) The method of claim 1 wherein the bacteria further comprises a gene encoding ß-hydroxyacyl-ACP-coenzyme A transferase.

11-13. (canceled)

14. (previously presented) The method of claim 1 wherein the bacteria is *E. coli*.

15. (cancelled).

16. (previously presented) The method of claim 1 wherein the bacteria expresses a gene encoding a D-specific enoyl-CoA hydratase.

17. (currently amended) The method of claim 1 wherein the bacteria expresses a PHB biosynthetic thiolase, three enzymes from *C. acetobutylicum* that form butyryl CoA, thiolase specific for 3-ketohexanoyl CoA, reductase specific for 3-ketohexanoyl CoA, and ~~PHB~~ a polyhydroxyalkanoate (PHA) polymerase that accepts both 3-hydroxybutyryl CoA and 3-hydroxyhexanoyl CoA.

18. (previously presented) The method of claim 1 wherein the bacteria expresses one or more fatty acid biosynthetic enzymes.

19. (previously presented) The method of claim 18 wherein the fatty acid biosythetic enzymes convert acyl ACP to acyl CoA.

20. (original) The method of claim 19 where the enzymes are selected from the group consisting of ACP-CoA transacylase, acyl ACP thioesterase, and acyl CoA synthase.

21. (original) The method of claim 20 wherein the enzymes are acyl ACP thioesterase and acyl CoA synthase.

22- 34. (canceled)